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EVALUATION OF PINE BARK BEETLE INFESTATIONS ON BLUE MOUNTAIN, MISSOULA DISTRICT, LOLO NATIONAL FOREST, MONTANA

by

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INTRODUCTION

An evaluation of the status of bark beetle infestations in ponderosa pine stands on Blue Mountain, Missoula District, Lolo National Forest, was made March 30 and April 4, 1972, at the request of personnel of the Missoula District.

Extensive group killing of ponderosa pine in the vicinity of Blue Mountain was detected by District personnel in 1971. A subsequent evaluation revealed that tree killing was the result of pine engraver beetle, *Ips pini* (Say), infestation over most of the area and that a localized outbreak of mountain pine beetle, *Dendroctonus ponderosae* Hopk., occurred in the Hayes Creek drainage (Ciesla et al. 1971). Presuppression surveys in the Hayes Creek drainage indicated that a total of 4,814 ponderosa pines were killed by mountain pine beetle in 1969 and 1970 with a resultant volume loss of 29,640 board feet (Ciesla and McGregor 1971). Attempts by District personnel to initiate salvage sales in the area during 1971 failed.

PRESENT STATUS

The status of bark beetle infestations in the Blue Mountain-Hayes Creek area remains relatively unchanged compared to 1971 (Ciesla et al. 1971).

Groups of tree mortality examined on the slopes of Blue Mountain were the result of infestation by pine engraver beetle. A small proportion of trees in these groups were also attacked by mountain pine beetle but mountain pine beetle appeared to be behaving as a secondary invader. One group of infested trees was adjacent to thinning slash deposited during the late summer of 1971. The thinning slash probably served as a source of brood. Other infestations examined were in relatively undisturbed stands which had been marked for precommercial thinning.

An active mountain pine beetle infestation continues to occur in the lower portions of Hayes Creek (Fig. 1). Ten multiple-tree infestations were examined. Eight of these contained trees which had been attacked in 1971 and contained overwintering mountain pine beetle larvae, pupae, and adults. No systematic counts of brood densities were made, but brood appeared to be vigorous indicating a potential for continued mountain pine beetle activity in this drainage during 1972. Mountain pine beetle attacks occurred in dense, overstocked patches of ponderosa pine.

DISCUSSION AND RECOMMENDATIONS

Direct control of pine engraver beetle is impractical. Trees attacked by this insect last summer no longer contain broods. Broods have emerged and are overwintering in the litter. If precommercial thinning operations are to continue in the Blue Mountain area, a continuous supply of green slash should be made available for *Ips* invasion in an attempt to prevent attack in standing trees. Thinning crews should avoid piling slash against residual trees as this increases their susceptibility to beetle attack.

The ponderosa pine stand in Hayes Creek appears to be under stress due to overstocking and therefore susceptible to continued attack by mountain pine beetle. Removal of infested trees by commercial sales and thinning to a more desirable stocking should afford long-term protection of the residual stand if it is to be managed for timber production.

Trees killed by bark beetles should be removed in the heavily used recreation zones as part of the District's hazard tree removal program.

REFERENCES CITED

Ciesla, W. M., M. D. McGregor, and H. E. Meyer, 1971. Status of bark beetle infestations near Blue Mountain, Missoula District, Lolo National Forest, Montana. USDA, Forest Service, Northern Region, Division of State and Private Forestry, Insect and Disease Report 71-6.

Ciesla, W. M., and M. D. McGregor, 1971. Impact of the mountain pine beetle on the Lolo National Forest, Montana. USDA, Forest Service, Northern Region, Division of State and Private Forestry, Insect and Disease Report 71-7.

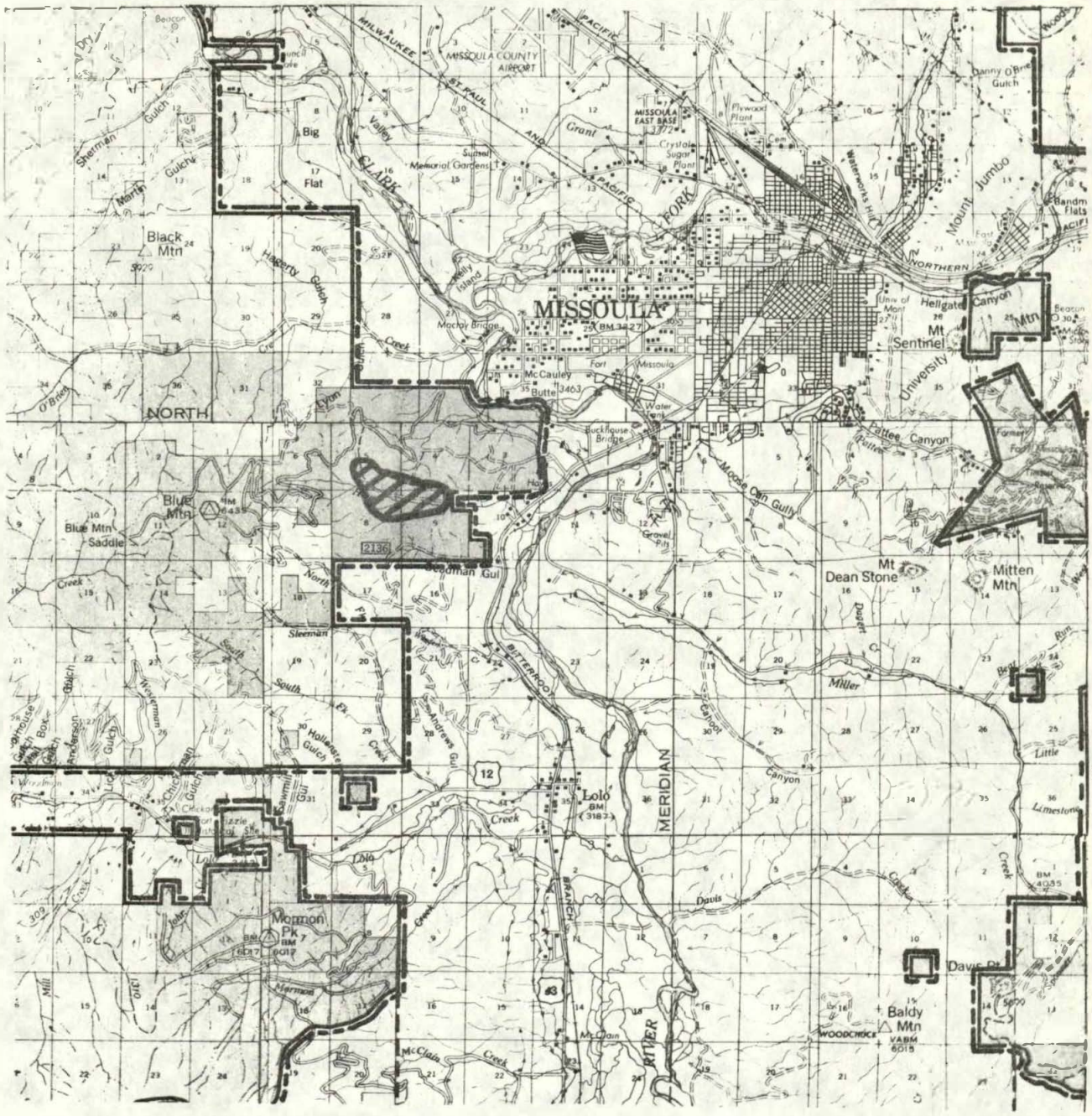

Figure 1.--Location of mountain pine beetle infestation in the Hayes Creek drainage, Missoula District, Lolo National Forest, March 1972.